

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
19 February 2004 (19.02.2004)

PCT

(10) International Publication Number
WO 2004/015121 A1

(51) International Patent Classification?:
13/04, 7/16, 7/18, 7/20, 7/24, 7/28, 7/06

C12P 7/40,

(74) Common Representative: CIBA SPECIALTY CHEMICALS WATER TREATMENTS LIMITED; Cleckheaton Road, Low Moor, Bradford, West Yorkshire BD12 0JZ (GB).

(21) International Application Number:

PCT/EP2003/008427

(22) International Filing Date: 30 July 2003 (30.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

0218021.4

5 August 2002 (05.08.2002)

GB

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): CIBA SPECIALTY CHEMICALS WATER TREATMENTS LIMITED [GB/GB]; Cleckheaton Road, Low Moor, Bradford, West Yorkshire BD12 0JZ (GB).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): HUGHES, Jonathan [GB/GB]; 6 Lightridge Road, Fixby, Huddersfield, West Yorkshire HD2 2HE (GB). SYMES, Kenneth, Charles [GB/GB]; 4 Silk Mill Drive, East Moreton, Keighley, West Yorkshire BD20 5UU (GB).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PRODUCTION OF A FERMENTATION PRODUCT

(57) Abstract: A process of separating suspended solids from a fermentation liquor by subjecting the liquor to a solids-liquid separation stage, wherein the fermentation liquor is produced in a fermentation process for the production of a fermentation product, which liquor comprises water, lignin and BOD, wherein the solids liquid separation stage is assisted by a treatment system, characterised in that the treatment system comprises either, (i) a cationic polymer having an intrinsic viscosity (IV) of at least 4 dl/g at a dose of above 2 kg/tonne based on dry weight of suspension, or (ii) a cationic polymer having an intrinsic viscosity (IV) of at least 4 dl/g and, (iii) an anionic polymer, and/or (iv) a cationic polymer of intrinsic viscosity of below 4 dl/g and a cationic charge density of at least 3 meq/g and/or (v) inorganic coagulants and/or (vi) charged microparticulate material.



WO 2004/015121 A1